

REMARKS

Claim 1 is pending in this application and was amended. The objections and rejections set forth in the Office Action are respectfully traversed below.

The Drawings:

The Office Action alleged that Figure 4 should be designated by the label "PRIOR ART". However, the specification described Figure 4 as depicting a preferred embodiment of the second on-off valve 7. Accordingly, Applicants respectfully submit that Figure 4 should not be designated as "PRIOR ART".

The Office Action also objected to the drawings because the drawings include reference numbers 81, 82, 91, 92, 95, 95b, 96, and 96b, which were allegedly not described in the specification. Corrective thereto, Applicants have amended the specification to include the subject reference numbers where appropriate. Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

Finally, the Office Action objected to the drawings because the reference number 71 in Fig. 1(a) is missing a leader line. Corrective thereto, Applicants have submitted herewith a Request for Approval of Drawing Changes noting the corrections thereon. Accordingly, withdrawal of this objection is respectfully requested.

The Abstract:

The Abstract was objected to due to a minor informality. Specifically, the Examiner alleges that the Abstract contains improper claim language. Corrective thereto, the Abstract has

been amended to recite: "Coupling members each having a fluid channel ~~comprising~~ having an opening passageway ..." Accordingly, removal of this objection is respectfully requested.

The Specification:

The disclosure was objected to because brief descriptions of figures 1(a), 1(b), 2(a), and 2(b) were missing. Corrective thereto, Applicants have amended the specification to have the brief descriptions of the drawings refer to the subject figures. Accordingly, removal of this objection is respectfully requested.

Rejections Under 35 U.S.C. §103:

Claim 1 has been rejected under 35 U.S.C. §103(a) as being unpatentable over **Ohmi et al.** (U.S. Patent No. 6,145,888) in view of **Coonce et al.** (U.S. Patent No. 6,039,319). Applicants respectfully traverse these rejections.

The Office Action appears to rely on the primary reference to **Ohmi** for the basic structural arrangement of a fluid coupling. The Office Action makes the further reference to **Coonce** for allegedly disclosing the primary feature of the present claimed invention regarding the relative diameters between the opening passageway, the annular ridge, and the gasket.

First, it is noted that both **Ohmi** and **Coonce** disclose a conventional fluid couplings as described in the present specification (page 1, lines 13-15). However, contrary to the present invention, the fluid couplings of the cited references each have a main passage *orthogonal* to the butting end face. As clearly described in the present specification (page 4, lines 4-8), the present invention discloses fluid couplings having the problem that the main passageway is *slanted*, and

therefore, the diameter of the fluid channel becomes small. This feature is neither taught or suggested by **Ohmi** or **Coonce**.

The primary reference to **Ohmi** does not teach or suggest the present claimed structures for a fluid coupling. In particular, the Office Action alleged that BB indicated on page 3 of the Office Action represents the disclosure in **Ohmi** for a "slanting main passageway." This is incorrect. Applicants respectfully submit that one of ordinary skill in the art would not consider the slight beveling of the passageway (so that the end of the passageway has a larger diameter) as constituting the present claimed "**main** passageway." As can be readily appreciated from Figure 1 of the present application, the slanting main passageway **75b** and **76b** has an appreciable length thereto — not the mere incidental slant/beveling depicted in Figure 1 of **Ohmi**. In addition, as mentioned above, the present claimed invention calls for a **slanting** main passageway - not one with an **enlarging** inner diameter as in **Ohmi**. For at least this reason, nothing in the prior art, either alone or in combination, teaches or suggests all the features recited in the present claimed invention.

Moreover, the further reference to **Coonce** does not remedy the deficiencies in the primary reference to **Ohmi**. The gasket disclosures of **Coonce** are not even directed to the basic structures of a fluid coupling as recited in the present claimed invention (*e.g.*, there is no teaching or suggestion of the present claimed slanting main passageway communicating with the opening passageway, which in turn is orthogonal to the butting end face of the coupling member). In addition, **Coonce** does not teach or suggest the claimed annular ridges on butting end faces of the coupling members. For at least these reasons, nothing in the prior art, either alone or in combination, teaches or suggests all the features recited in the present claimed invention.

Summary

In view of the aforementioned amendments and accompanying remarks, the claims are in condition for allowance, which action, at an early date, is requested.

Attached herewith is a paper showing the amendments made to the specification and to the claims, and entitled "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 01-2340.

Respectfully submitted,
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Enclosures: VERSION WITH MARKINGS TO SHOW CHANGES MADE
Request for Approval of Drawing Changes

VERSION WITH MARKINGS TO SHOW CHANGES MADE
U.S. Serial No. 09/437,296

IN THE SPECIFICATION:

The paragraph beginning at page 5, line 22, has been amended as follows:

~~--FIG. 1 includes~~ FIGS. 1(a) and 1(b) include sectional views showing a fluid coupling embodying the invention;--

The paragraph beginning at page 5, line 24, has been amended as follows:

~~--FIG. 2 includes~~ FIGS. 2(a) and 2(b) include sectional views showing a fluid coupling for comparison;--

The paragraph beginning at page 8, line 15, has been amended as follows:

--For comparison, FIG. 2, sections (a) and (b) show a fluid coupling (Comparative Example 1) comprising first and second coupling members 12, 31 formed with respective fluid channels 85, 86 and a gasket 83. Each fluid channel 86 (86) comprises an opening passageway 85a (86a) and a slanting main passageway 85b (86b) communicating with the passageway 85a (86a). The opening passageways 85a, 86a have a diameter equal to the inside diameter of the gasket 83. Gasket holding annular ridges 81a, 82a of cylindrical projections 81, 82 have an inside diameter larger than the inside diameter of the gasket 83.--

VERSION WITH MARKINGS TO SHOW CHANGES MADE
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The paragraph beginning at page 9, line 2, has been amended as follows:

--Further for comparison, FIG. 3 shows a fluid coupling (Comparative Example 2) wherein each fluid channel 95 (96) comprises an opening passageway 95a (96a) and a slanting main passageway 95b (96b) and the opening passageways 95a, 96a have a diameter equal to the diameter of the opening passageways 75a, 76a of the fluid coupling of the invention and also equal to the inside diameter of a gasket 93 and to the inside diameter of gasket holding annular ridges 91a, 92a of cylindrical projections 91, 92.--

IN THE CLAIMS:

Claim 1 has been amended as follows:

1. (Amended) A fluid coupling comprising first and second coupling members ~~(12), (31)~~ having respective gasket holding annular ridges ~~(71a, 72a)~~ on butting end faces thereof, and an annular gasket ~~(73)~~ interposed between the two coupling members ~~(12), (31)~~, the fluid coupling being characterized in that at least one of the coupling members ~~(12), (31)~~ has a fluid channel ~~(75, 76)~~ comprising an opening passageway ~~(75a, 76a)~~ orthogonal to the butting end face thereof, and a slanting main passageway ~~(75b, 76b)~~ communicating therewith, and having a diameter smaller than the diameter of the opening passageway, the diameter of the opening passageway (75a, 76a) having a diameter being equal to the inside diameter of the annular ridge (71a, 72a), the gasket (73) having an inside diameter smaller than the diameter of the opening passageway (75a, 76a).

SUBSTITUTE ABSTRACT

AS --Coupling members each have a fluid channel having an opening passageway orthogonal to an abutting end face of the coupling member, and a slanting main passageway communicating with the opening passageway. The opening passageway has diameter equal to the inside diameter of a gasket holding annular ridge of the coupling member. A gasket has an inside diameter smaller than the diameter of the opening passageway.--
